




UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,129	07/16/2003	Yuriy Gmirya	67,008-070;S-5668	1958
26096	7590	09/09/2004	EXAMINER	
CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			LE, DAVID D	
			ART UNIT	PAPER NUMBER
			3681	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/621,129	GMIRYA, YURIY	
	Examiner	Art Unit	
	David D. Le	3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>07/16/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is the first Office action on the merits of Application No. 10/621,129, filed on 16 July 2003. Claims 1-19 are pending.

Documents

2. The following documents have been received and filed as part of the patent application:
 - Information Disclosure Statement, received on 7/16/03

Specification

3. The disclosure is objected to because of the following informalities:
 - Paragraph [35], line 1, the word “output” should be --input--.
 - Paragraph [36], line 4, the reference numbers “46a, 46b, 20a, 20b” should be --46A, 46B, 20A, 20B--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-2 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by UK**

Patent Application No. GB2130682 A.

Claims 1-2 and 12:

GB'682 (Figs. 1-4; pages 1-3) discloses a drive mechanism comprising:

- A first gear (18) having a first gear rotation axis (see Fig. 3);
- A second gear (19) having a second gear rotation axis (see Fig. 3);
- A third floating pinion (30) having a third floating pinion axis (see Fig. 3);
- A radially unsupported pinion shaft (31) (see Fig. 4);
- Wherein the third floating pinion (30) is meshed with the first gear (18) and the second gear (19);
- Wherein the first gear rotation axis, the second gear rotation axis, and the third floating pinion axis are located along a common line (see Fig. 3); and
- Wherein the third floating pinion axis is displaceable off the common line to split a load between the first gear (18) and the second gear (19) (see Fig. 3 and page 2, lines 80-100).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3681

7. Claims 3-11 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 5,813,292 to Kish et al. in view of U.K. Patent Application No. GB2130682 A.

Claims 3-11 and 13-19:

Kish (i.e., Figs. 1-2 and 6; column 1, line 50 – column 13, line 62) discloses a split path transmission system comprising:

- An input shaft (104L or 104R);
- A face gear (being the bevel gear 112L or 112R) driven by the input shaft about a face gear axis of rotation (see Fig. 1);
- A first spur gear (116L Fwd or 116R Fwd) mounted for rotation about a first spur gear axis of rotation (see Fig. 1);
- A second spur gear (116L Aft or 116R Aft) mounted for rotation about a second spur gear axis of rotation (see Fig. 1);
- A floating pinion (114L or 114R) driven by a pinion shaft mounted to the face gear, the floating pinion meshed with the first spur gear and the second spur gear, and the pinion mounted for rotation about a pinion axis of rotation (see Fig. 1);
- A first double helical gear (118L Fwd or 118R Fwd);
- A second double helical gear (118L Aft or 118R Aft);
- An output gear (108) meshed with the first and second double helical gears (see Fig. 1);
- A main rotor shaft (102) driven by the output gear;

Art Unit: 3681

- Wherein the input shaft is driven by a gas turbine engine (column1, lines 50-55);
and
- Wherein the face gear defines a gear face perpendicular to the face gear axis of rotation, and the input shaft angled relative to the gear face (see Fig. 1).

Kish does not teach wherein the pinion axis of rotation, first spur gear axis of rotation, and second spur gear axis of rotation are located along a common line; and, the pinion axis of rotation is displaceable off the common line to split a load between the first spur gear and the second spur gear.

GB'682 (Figs. 1-4; pages 1-3), on the other hand, discloses a drive mechanism comprising wherein the pinion axis of rotation, first spur gear axis of rotation, and second spur gear axis of rotation are located along a common line; and, the pinion axis of rotation is displaceable off the common line to split a load between the first spur gear and the second spur gear, as set forth in paragraph 5 above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify *Kish*'s gear train branches 106L and 106R such that the pinion axis of rotation, first spur gear axis of rotation, and second spur gear axis of rotation are located along a common line and the pinion axis of rotation is displaceable off the common line to split a load between the first spur gear and the second spur gear, in view of *GB'682*, in order to ensure the torque transmitted between the first and second spur gears are substantially equal.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- G.B. Hamlin (U. S. Patent No. 106,360) teaches a mill gearing as shown in Figs. 1-3.
- Nagao et al. (U. S. Patent No. 5,528,960) teaches a power transmission apparatus as shown in Fig. 1.
- Matsuda et al. (U. S. Patent No. 6,364,611) teaches a helicopter power transmitting apparatus as shown in Figs. 1-3.
- Isabelle et al. (U. S. Patent No. 5,113,713) teaches an elastomeric load-sharing device as shown in Fig. 1.
- Hulshof (U. S. Patent No. 6,761,082) teaches a gear drive apparatus as shown in Fig. 5.
- Warren (U. S. Patent No. 3,772,934) teaches a floating helical gear as shown in Fig. 1.
- Sigg (U. S. Patent No. 3,905,250) teaches a gear assembly as shown in Fig. 1.
- H.W. Semar et al. (U. S. Patent No. 2,823,558) teaches a gearing apparatus as shown in Fig. 1.
- Fahy et al. (U. S. Patent No. 5,129,276) teaches meshing gear members as shown in Fig. 1.
- Hanslik (U. S. Patent No. 3,969,956) teaches a transmission for multi-screw extruder as shown in Fig. 1.
- U.K Patent Application No. GB2158895 A teaches a main helicopter drive as shown in Fig. 1.


Art Unit: 3681

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Le whose telephone number is 703-305-3690. The examiner can normally be reached on Mon-Fri (0700-1530).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A Marmor can be reached on 703-308-0830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ddl


CHARLES A. MARMOR
SUPERVISORY PATENT EXAMINER
ART UNIT 3681